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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/763,051	01/22/2004	Peter E. Oettinger	2003627-0006	3799

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EXAMINER	
KAO, CHIH CHENG G	

ART UNIT	PAPER NUMBER
2882	

DATE MAILED: 10/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/763,051	OETTINGER ET AL.	
	Examiner	Art Unit	
	Chih-Cheng Glen Kao	2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 July 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-41* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-41* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 January 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. Drawings were received on 3/24/05 and 7/28/05. These drawings are acceptable.

2. The drawings are objected to because of the following informalities: (fig. 1c, interconnect wiring 16, which should be 18).

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claim 33 is objected to because of the following informality, which appears to be a minor draft error.

In the following format (location of objection; suggestion for correction), the following suggestion may obviate the objection: (claim 33, line 1, "X-ray module of Claim,"; inserting - - 32- - after "of Claim").

For purposes of examination, the claim has been treated as such. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 4, 9, 11, 30, 31, 34, and 39 are rejected under 35 U.S.C. 102(b) as being anticipated by Skillicorn (US Patent 4694480).

5. Regarding claims 1 and 30, Skillicorn discloses an apparatus comprising an x-ray tube that emits x-rays (fig. 8c, #26), a high voltage power supply (fig. 8c, #66) coupled to said x-ray tube that supplies a high voltage for use with said x-ray tube, and electrical connection (fig. 8c, #78) that connects the x-ray tube to the high voltage power supply, wherein the x-ray tube, the high voltage power supply, and the electrical connection are encapsulated in a solid, electrically-

insulating material containing a radio-opaque material including a lead compound (col. 5, lines 33-37, and col. 6, lines 26-29).

6. Regarding claims 4 and 34, Skillicorn would necessarily have an amount of said radio-opaque material in accordance with a predetermined degree of radiation attenuation for purposes of shielding a user from unnecessary radiation (col. 6, lines 26-29).

7. Regarding claims 9, 11, 31, and 39, Skillicorn further discloses a molded complex shape (col. 5, line 31, and fig. 1, #22) and portability (title).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 2, 3, 12, 18, 20, 32, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Skillicorn as applied to claims 1 and 30 above, and further in view of Nomikos et al. (US Patent 5153900).

9. Regarding claims 2, 3, 12, 32, and 33, Skillicorn discloses an apparatus as recited above. Skillicorn further discloses electrical connections (fig. 8c, #78 and connection between #66 and 84).

However, Skillicorn does not disclose a resonant converter that drives a high voltage power supply connected to a step up transformer driving a high-voltage multiplier.

Nomikos et al. teaches a resonant converter (fig. 6, #280) that drives a high voltage power supply connected to a step up transformer (fig. 6, #282) driving a high-voltage multiplier (fig. 6, #284).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to incorporate the apparatus of Skillicorn with the converter, transformer, and multiplier of Nomikos et al., since one would be motivated to make such a modification to provide better control (col. 9, line 61, to col. 10, line 30) as implied from Nomikos et al.

10. Regarding claims 18 and 20, Skillicorn further discloses a molded complex shape (col. 5, line 31, and fig. 1, #22) and portability (title).

11. Claims 5, 21, 23, 25, 29, and 35 are rejected as being under 35 U.S.C. 103(a) as being unpatentable over Skillicorn as applied to claims 1 and 30 above, and further in view of Malcolm et al. (US Patent 4979198).

12. Regarding claims 5, 21, and 35, and for purposes of being concise, Skillicorn discloses an apparatus or method as recited above.

However, Skillicorn does not disclose a thin conductive layer over an electrically insulating material to provide electric shielding.

Malcolm et al. teaches a thin conductive layer over an electrically insulating material to provide electric shielding (col. 10, lines 15-23).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to incorporate the apparatus or method of Skillicorn with the conductive layer of Malcolm et al., since one would be motivated to make such a modification for better protection (col. 10, lines 15-23) as implied from Malcolm et al.

13. Regarding claim 23, Skillicorn further discloses encapsulating power (fig. 6, #66) and control (fig. 6, #78) circuit components in a solid cast block including a radio-opaque material (fig. 6, #42).

14. Regarding claims 25 and 29, Skillicorn would necessarily have an amount of said radio-opaque material in accordance with a predetermined degree of radiation attenuation for purposes of shielding a user from unnecessary radiation (col. 6, lines 26-29), and portability (title).

15. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Skillicorn in view of Nomikos et al. as applied to claim 12 above, and further in view of Malcolm et al.

Skillicorn as modified above suggests an apparatus as recited above.

However, Skillicorn does not disclose a thin conductive layer over an electrically insulating material to provide electric shielding.

Malcolm et al. teaches a thin conductive layer over an electrically insulating material to provide electric shielding (col. 10, lines 15-23).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to incorporate the apparatus of Skillicorn as modified above with the conductive layer of Malcolm et al., since one would be motivated to make such a modification for better protection (col. 10, lines 15-23) as implied from Malcolm et al.

16. Claims 6-8, 15-17, 26-28, and 36-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Skillicorn, Nomikos et al., and Malcolm et al. as applied to claims 5, 14, 21, and 35 above, and further in view of Davies (US Patent 5927482).

Skillicorn as modified above suggests an apparatus and method as recited above.

However, Skillicorn does not disclose a thin conductive layer composed from a thin metal foil made from at least one of copper and aluminum adhered adhesively.

Davies teaches a thin conductive layer composed from a thin metal foil adhered adhesively (col. 2, lines 51-60). Davies further teaches using copper or aluminum for shielding (col. 2, lines 47-53).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to incorporate the apparatus and method of Skillicorn as modified above with the metal foil of Davies, since one would be motivated to make such a modification for better protection (col. 2, lines 51-52) as implied from Davies.

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to incorporate the apparatus and method of Skillicorn as modified above with copper or aluminum, since it is within the general skill of a worker in the art to select a

known material on the basis of it suitability. One would be motivated to use copper or aluminum for better protection (col. 2, lines 47-52) as implied from Davies.

17. Claims 10, 19, and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Skillicorn and Nomikos et al. as applied to claims 1, 12, and 30 above, and further in view of Courtois (US Patent 3643094).

Skillicorn as modified above suggests an apparatus as recited above.

However, Skillicorn does not disclose an x-ray tube and power supply connected by a coaxial cable.

Courtois teaches an x-ray tube and power supply connected by a coaxial cable (col. 1, lines 14-16).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to incorporate the apparatus of Skillicorn as modified above with the coaxial cable Courtois, since one would be motivated to make such a modification to prevent damage (col. 1, lines 14-16) as implied from Courtois.

18. Claims 13 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Skillicorn, Nomikos et al., and Malcolm et al. as applied to claims 12 and 21 above, and further in view of Moulton (US Patent 6494618).

Skillicorn as modified above suggests an apparatus or method as recited above.

However, Skillicorn does not disclose insulating material formed from urethane.

Moulton teaches insulating material formed from urethane (col. 5, line 29).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to incorporate the apparatus or method of Skillicorn as modified above with the urethane of Moulton, since one would be motivated to make such a modification to prevent unnecessary x-rays and damage (col. 2, lines 10-12) as implied from Moulton.

19. Claim 24 is rejected as being under 35 U.S.C. 103(a) as being unpatentable over Skillicorn in view of Malcolm et al. as applied to claim 21 above, and further in view of Tomita (JP 05-031740).

Skillicorn as modified above suggests a method as recited above.

However, Skillicorn does not disclose casting using a two-part epoxy-resin system.

Tomita teaches casting using a two-part epoxy-resin system (title).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to incorporate the method of Skillicorn as modified above with the casting system of Tomita, since one would be motivated to make such a modification to reduce bubbles in the structure for a better structure (abstract, use/advantage) as implied from Tomita.

20. Claim 41 are rejected as being under 35 U.S.C. 103(a) as being unpatentable over Skillicorn as applied to claim 1 above, and further in view of Aitken (GB 2007480).

Skillicorn discloses an apparatus as recited above.

However, Skillicorn does not disclose lead oxide.

Aitken teaches lead oxide (abstract).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to incorporate the apparatus of Skillicorn as modified above with the lead oxide of Aitken, since one would be motivated to make such a modification for a less bulky device (page 1, lines 8-14) as shown by Aitken.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

21. Claims 1-41 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 8-29, 51-60, and 63-74 of copending Application No. 10/370783 in view of Aitken.

Application No. 10/370783 claims a module and method comprising an x-ray tube, a high-voltage supply, and electrical connection, wherein the tube, power supply, and electrical connection are encapsulated in an electrically-insulating, radio-opaque material including at least one of a lead compound using a two-part epoxy-resin casting system, a resonant converter, a step up transformer, high-voltage multiplier, wherein an amount of said material is in accordance with a predetermined degree of radiation attenuation, a thin conductive layer formed from a

metal foil made of copper adhered adhesively, wherein the electrically-insulating material is molded into a complex shape, wherein the power supply is connected by a coaxial cable, and wherein the module is portable (claims 8-29, 51-60, and 63-74).

However, Application No. 10/370783 does not claim tin or lead oxide.

Aitken teaches tin (claim 4) or lead oxide (abstract).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to incorporate the claims of Application No. 10/370783 as modified above with the tin or lead oxide of Aitken, since one would be motivated to make such a modification for a less bulky device (page 1, lines 8-14) as implied from Aitken.

Response to Arguments

22. Applicant's arguments filed 7/28/05 have been fully considered but they are not persuasive.

23. Regarding rejections under 35 USC § 102, Applicants argue that Skillicorn fails to disclose encapsulating components "in a solid, electrically-insulating material containing a radio-opaque material" as disclosed in independent claims 1 and 30. The Examiner disagrees. As pointed out by Applicants, Skillicorn discloses a block surrounded by a lead sheath. The Examiner has interpreted the block surrounded by a lead sheath as reading on a solid, electrically-insulating material containing a radio-opaque material. In other words, the solid material contains a block and a lead sheath.

The Applicants also argue that Skillicorn fails to disclose a molded complex shape, noting that Figure 1 shows a rectangular material. The Examiner disagrees. The material also has rounded curves as seen in Figure 2 and holes for other components as seen in Figure 6. Therefore, the other shapes together make the material a complex shape.

24. Regarding rejections under 35 USC § 103, Applicants argue that Nomikos et al. fails to disclose a resonant converter. The Examiner disagrees. Although the resonant converter described in the specification of the Applicants may be different from the resonant converter of Nomikos et al., features upon which Applicants rely are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. The flyback switching converter of Nomikos et al. reads on the term "resonant converter" in the claim.

Applicants further argue that Davies fails to disclose the use of a conductive layer on the *outside* of an encapsulating block. In response to Applicants' arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. Although Davies may not disclose the use of a conductive layer on the outside of an encapsulating block, Davies in combination with prior art suggests and makes obvious the use of a conductive layer on the outside of an encapsulating block.

Regarding Tomita, in response to Applicants' arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. Furthermore, in response to Applicants'

argument that the motivation cited by the Examiner is not actually a goal of the claim, the fact that Applicants have recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. Additionally, in response to Applicants' argument that the Examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper.

25. Regarding double patenting, Applicants argue that the Examiner has applied an improper standard for double patenting. The Examiner disagrees. The Examiner determined that the claimed subject matter is not patentably distinct from the subject matter claimed in a commonly owned copending application. In other words, the claims in the instant application define an invention that is merely an obvious variation of an invention claimed in the other copending application.

A double patenting rejection of the obviousness-type is "analogous to [a failure to meet] the nonobviousness requirement of 35 U.S.C. 103" except that the copending application principally underlying the double patenting rejection is not considered prior art. Therefore, any analysis employed in an obviousness-type double patenting rejection parallels the guidelines for analysis of a 35 U.S.C. 103 obviousness determination. Thus, it would have been obvious, to

one of ordinary skill in the art to conclude that the invention defined in the claim in issue is an obvious variation of the invention defined in a claim in the copending application.

Applicants' arguments are not persuasive, and the claims remain rejected.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chih-Cheng Glen Kao whose telephone number is (571) 272-2492. The examiner can normally be reached on M - F (9 am to 5 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

gk

EDWARD J. GLICK
SUPERVISORY PATENT EXAMINER

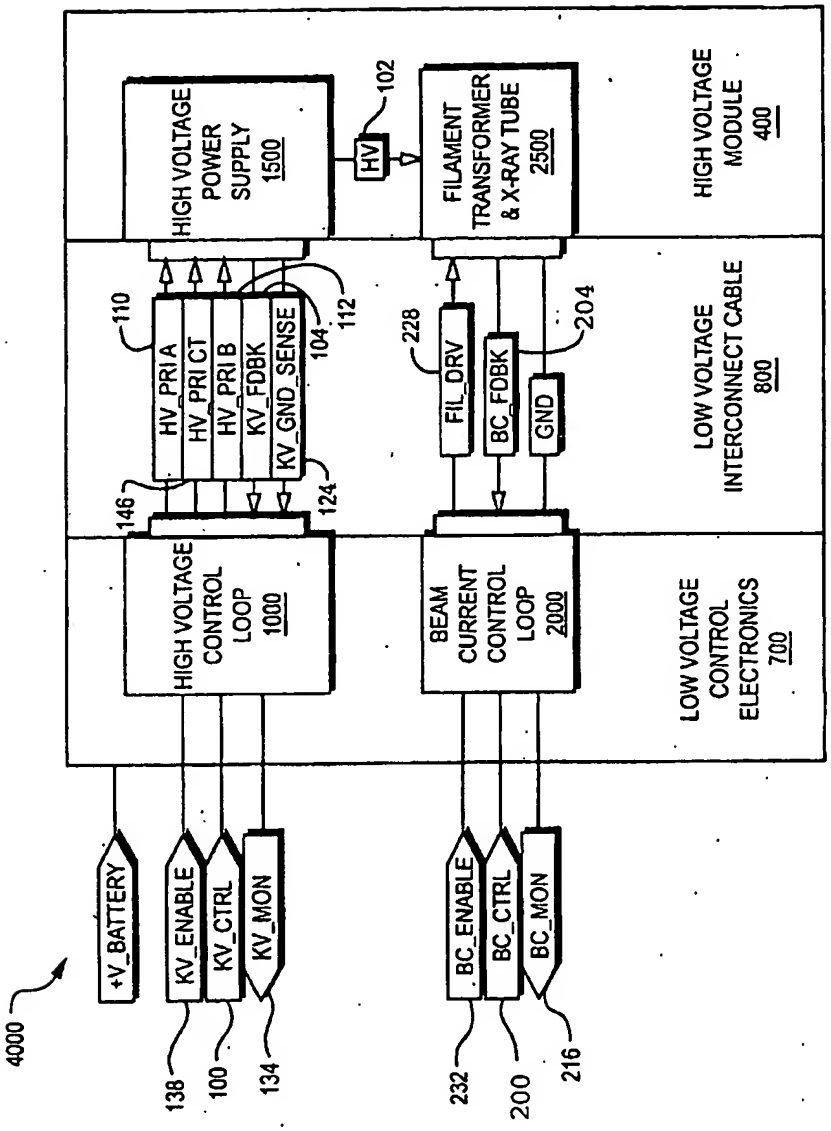

FIG. 2E

Approved
OK to enter
CK
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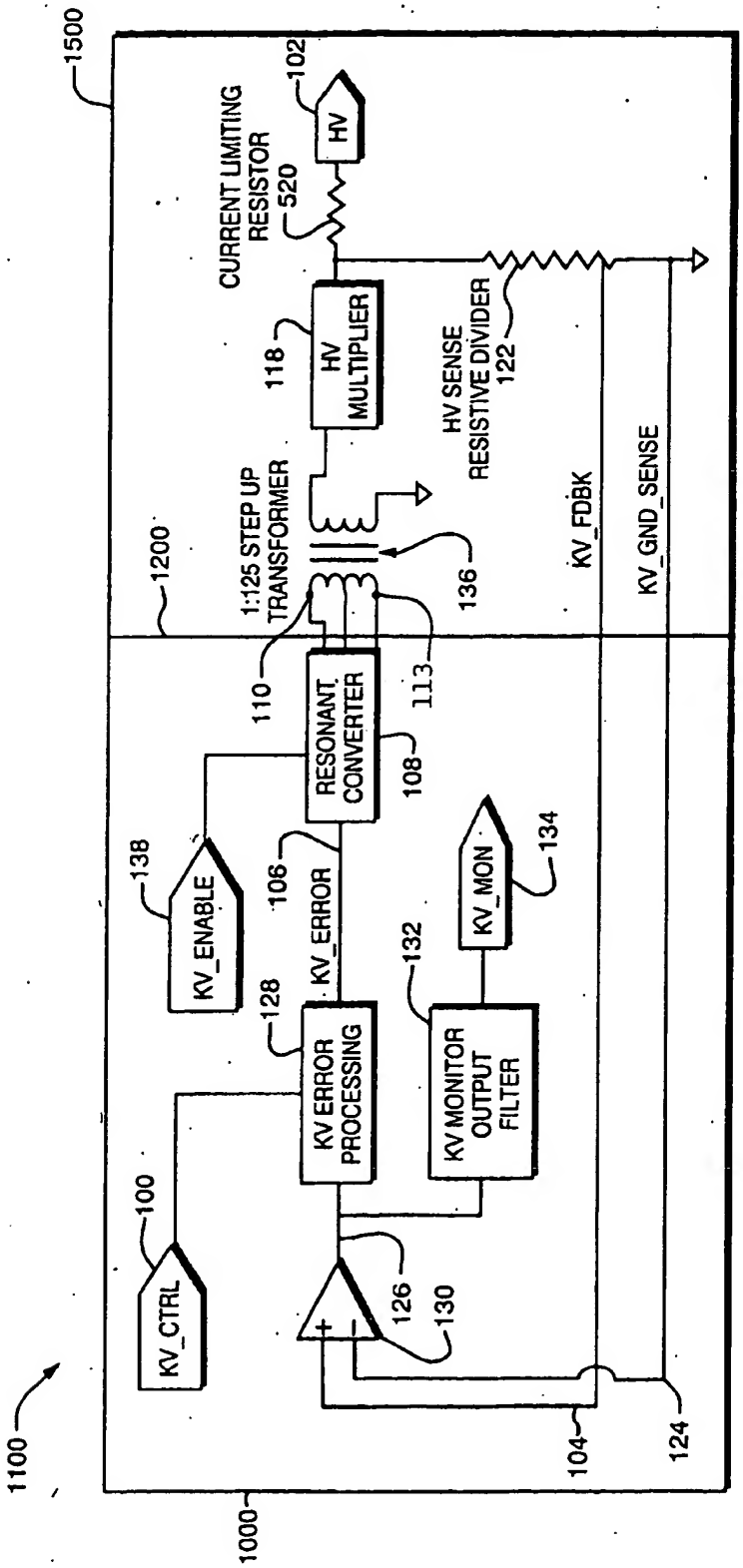

FIG. 3A

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OK to
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